A.D. 1888. Nov. 13. N° 16,354.
TAYLOR'S COMPLETE SPECIFICATION.

SHEET 1

FIG. 1.

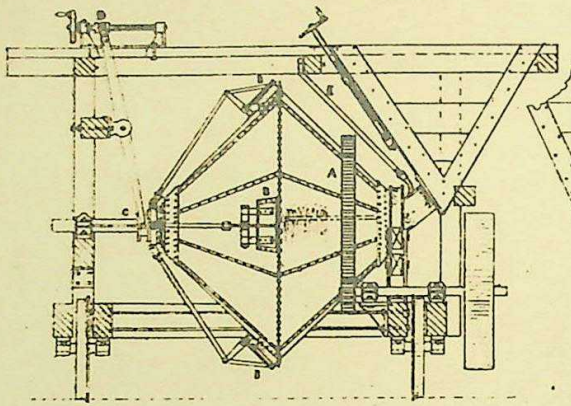


FIG. 2

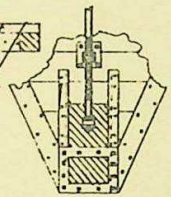


FIG. 5.

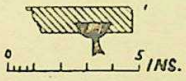
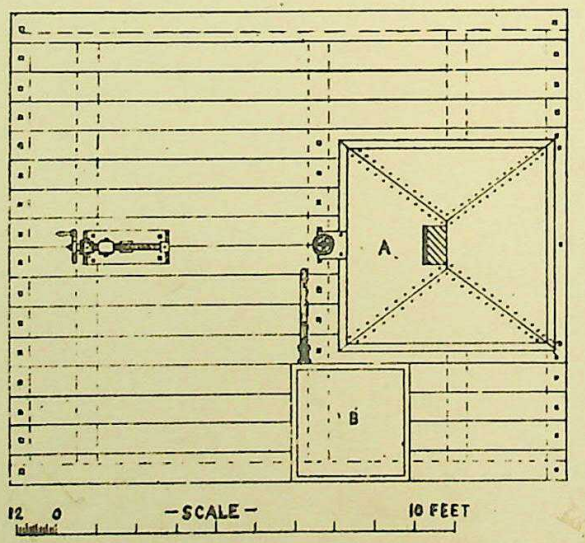


FIG. 4.



(2 SHEETS)
SHEET 2.

FIG. 3.

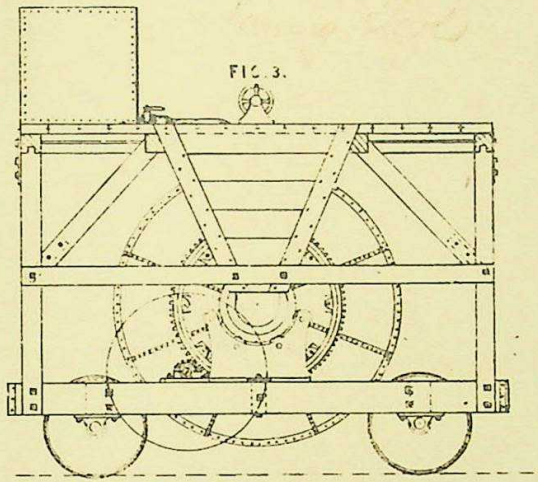
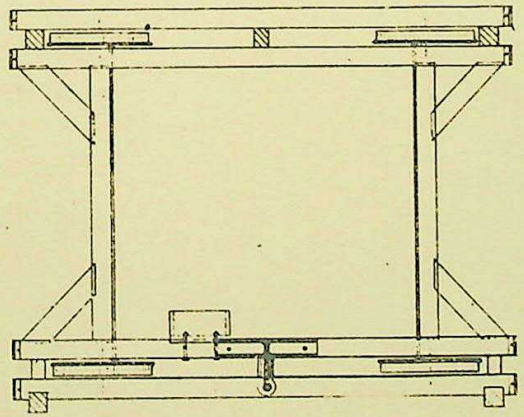


FIG. 6.



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16,354

British

This Drawing is a reproduction of the Original on a reduced scale.

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Malby & Sons, Photo-Litho.

N° 16,354 A.D. 1888

Date of Application, 12th Nov., 1888
Complete Specification Left, 12th Aug., 1889—Accepted, 19th Oct., 1889

PROVISIONAL SPECIFICATION.

Double Cone Mixing Machine for Concrete and other Purposes.

I, Robert Henry Taylor Regent House Wilson Grove Southsea, in the County of Hampshire, Civil and Mechanical Engineer do hereby declare the nature of this invention to be as follows :—

A pair of hollow truncated cones joined together at their bases by exterior flanges, and bolts, provided with journals and bearings at the truncated parts, arranged so as to revolve truly on their axis, one end being closed by the flanged bearing shaft, the other being open to receive the materials to be mixed, which are contained in a hopper holding sufficient for a cube yard, placed immediately over the axial line and led into the cones by a shoot regulated by a screw spindle slide *etc.*—The cones to be made of cast, or plate iron, or steel, as may be considered best. The inside to be perfectly free from obstruction for the gravitating and changing movement of the materials while thoroughly mixing by the revolving action of the cones, which are driven by a spur wheel attached to the cone having the entrance opening, at about the middle circumference, and fixed with lugs instead of boss and arms, a pinion and pulley on countershaft attached by bearings to the framing ; giving motion by steam power, if a cube yard machine, and by steam or hand if a half cube yard mixers.

The proportionate quantities of cement, sand and shingle *etc.* to be arranged indiscriminately in the hopper, which feeds the machine while running, thereby saving time. The discharge from the cones—while still revolving—of the mixed material also saving time—is arranged from four doors, one placed at each quarter of the circumference, at the base of one of the cones, the said doors being opened and closed by radial adjustable connecting rods to a sliding boss on the bearing shaft, and water tight joints being made by semi-circular (in section) rubber recessed into the face of the doors, closing them on the rounded projecting edges of the outlets thereby making the joints water tight for the amount of pressure that can possibly be brought against them by the contained water and materials.

The opening and closing movement of the doors is arranged by a roller fork lever working in a groove of the aforesaid sliding boss on the bearing shaft—having its fulcrum in any convenient position above, or at the side, and a wheel on a screw working into a nut attached to the other end of the lever : The requisite amount of water for the mixing being supplied from a measure tank overhead, passing in by a pipe through the same opening as the materials :—The whole arrangement being mounted on a framing of timber or iron, suitable to the circumstances of its use. The framing may be made so that the hopper is placed at one end of a double pair of levers working on centres of sufficient height in the framing, and the cones at the other end, then by the descent of the top of hopper to ground level, a cart could discharge its contents into it for mixing.

The counterbalance weight of the cones, with a little assistance will take the hopper up to the required height to allow the material to run down a shoot into the cones while still revolving. The discharge being arranged as before described, but in this form, it is dropped direct into the cart from the revolving cones that have been partly balanced up by the hopper going down to recharge, assisted as before, by a chain over pullies near the ends of the beams ; arranged to lead to a crab purchase in the framing constructed to carry the centre bearings of the balance levers or beams.

This arrangement the inventor thinks, should not exceed a half yard cube mixing capacity, of both hopper and cones.

The simplicity of the design can be easily understood, and the great saving of labor it will effect.—The whole placed on wheels, plain or flanged, for portability if required ; being substantially as described.

[*Price* 8*d.*]

The principle of the invention (the double cones for mixing &c.) admits of many variations for similar purposes, and the inventor claims the various possible adaptations applicable.

Dated this 10th day of November 1888.

ROBT. H. TAYLOR, A.M. Inst. C.E., M. Inst. M.E., &c.

COMPLETE SPECIFICATION.

Double Cone Mixing Machine for Concrete and other Purposes.

I, ROBERT HENRY TAYLOR, Regent House Wilson Grove, Southsea, in the County of Hampshire, Civil and Mechanical Engineer, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

A pair of hollow truncated cones joined together at their bases by exterior flanges, and bolts, provided with journals and bearings at the truncated parts, arranged so as to revolve truly on their axis, one end being closed by the flanged bearing shaft, the other being open to receive the materials to be mixed which are contained in a hopper holding sufficient for a cube yard, placed immediately over the axial line and led into the cones by a shoot regulated by a screw spindle, slide *etc.* shewn partly in section and part in elevation Figures 1 & 2 on accompanying drawing.—The cones to be made of cast or plate iron, or steel, as may be considered best. The inside to be perfectly free from obstruction for the gravitating and changing movement of the materials while thoroughly mixing by the revolving action of the cones; which are driven by a spur wheel (A Fig. 1) attached to the cone having the entrance opening, at about the middle of the circumference, and fixed with lugs instead of boss and arms—a pinion and pulley on countershaft attached by bearings to the framing, giving motion by steam power if a cube yard machine, and by steam or hand if a half cube yard mixer.

The proportionate quantities of cement, sand and shingle *etc.* to be arranged indiscriminately in the hopper (A Fig. 4) which feeds the machine whilst running—thereby saving time.

The discharge from the cones (while still revolving) of the mixed materials, also saving time is arranged from four doors (B Fig. 1) one placed at each quarter of the circumference, at the base of one of the cones, the said doors being opened and closed by radial adjustable connecting rods to a sliding boss (C Fig. 1) on the bearing shaft, and water tight joints being made by semi-circular (in section) rubber (Fig. 5) recessed into the face of the doors, closing them on the rounded projecting edges of the outlets thereby making the joints water tight for the amount of pressure that can possibly be brought against them by the contained water and materials.

The opening and closing movement of the doors is arranged by a roller fork lever working in a groove of the aforesaid sliding boss (C Fig. 1) on the bearing shaft, having its fulcrum in any convenient position above, or at the side, and a wheel on a screw working into a nut (D Fig. 1) attached to the other end of the lever, the requisite amount of water for the mixing being supplied from a measure tank (B Fig. 4) overhead passing in by a pipe (E Fig. 1) through the same opening as the materials.—The whole arrangement being mounted on a framing of timber or iron suitable to the circumstances of its use.

The framing may be made so that the hopper is placed at one end of a double pair of levers working in centres of sufficient height in the framing, and the cones at the other end, then by the descent of the top of the hopper to ground level a cart could discharge its contents into it, for mixing. The counterbalance weight of the cones, with a little assistance will take the hopper up to the required height to allow the materials to run down a shoot into the cones while still revolving. The discharge being arranged as before described, but in this form of machine it is dropped direct into the cart from the revolving cones that have been partly balanced up by the hopper going down to re-charge, assisted as before, by a chain over pullies near the

ends of the beams; arranged to lead to a crab purchase in the framing constructed to carry the centre bearings of the balance levers or beams. This arrangement the inventor thinks should not exceed a half yard cube mixing capacity of both hopper and cones.

The simplicity of the design, and the great saving of labor it will effect, both in this arrangement, and that first described, as shewn on the drawing, which I have working, is very evident.

The whole placed on wheels plain thread or flanged, for portability if required.

The said invention being substantially as described and shewn in figures 1. 2. 3. 4. 5. & 6 on drawing herewith.

The principle of the invention (the double cones for mixing) admits of many variations for similar purposes and the inventor claims the various possible adaptations applicable.

Having now particularly described and ascertained the nature of my said Invention, and in what manner the same is to be performed, I declare that what I claim is:—

1. The novelty of the arrangement as shewn on the drawing, by introducing the materials to be mixed, through the truncated end of one of the pair of revolving cones.

2. The introduction of the hollow cones to form a machine for mixing purposes, that being the best possible form when revolving, for the required change of position of the materials to be mixed, by it always gravitating to the lowest position, both from the sides and middle of the cones.

3. The arrangement of the sliding boss, rods and doors, for the discharge of the mixed material, which open and close while the machine is revolving. A cube yard of concrete being thoroughly mixed and discharged in three minutes, and the doors closed again to receive the next charge, by means of this apparatus.

Dated 8th day of August 1888.

ROBT. H. TAYLOR, A.M. Inst. C.E., M. Inst. M.E., &c.

London: Printed for Her Majesty's Stationery Office, by Darling & Son, Ltd.—1889.